

REMARKS

I. Application Status

Claims 1-6, 9-11, 13, 14, 16, 18, 20-28, and 99-101 are pending in the Subject Application. Claims 7, 8, 12, 15, 17, 19, and 29-98 were previously canceled. Claims 6, 14, 23, 24, 27, and 28 currently stand withdrawn. Claims 1-5, 9-11, 13, 16, 18, 20-22, 25-26, and 99-101 are currently under examination on the merits. Claims 1, 10, 11, and 99 are independent claims.

In the Office Action, claims 11, 13, 16, 18, 20-22, 25-26, and 101 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly not meeting the written description requirement. Claims 99-101 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Claims 1-5, 9-11, 13, 16, 18, 20-22, and 26 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,097,311 to Ishibashi et al. ("Ishibashi").

Claims 1-5, 9-11, 13, 16, 18, 20-22, 25-26, and 99-101 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Szummer et al., "Hydrogen surface effects in ferritic stainless steels", *J. Alloys and Compounds*, 293-295 (1999) 356-360 ("Szummer") in view of Japan Patent Publication No. 10-280103 to Ono et al. ("Ono").

Claims 1-5, 9-11, 13, 18, 21, 25-26, 99, and 101 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Szummer in view of International Patent Application Publication No. WO 99/10554 to Linden et al. ("Linden").

Claims 1-5, 9-11, 13, 18, 21, and 25-26, 99 and 101 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Szummer in view of Japan Patent Publication No. 06-172933 to Uematsu et al. ("Uematsu").

Claims 1-5, 9-11, 13, 16, 18, 20-22, 25-26, 99, and 101 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Szummer in view of

Japan Patent Publication No. 09-209092 to Matsui et al. ("Matsui").

Applicant respectfully traverses all rejections. In view of the amendments and remarks set forth herein, Applicant respectfully requests reconsideration and allowance of the Subject Application. All references to the "Specification" herein refer to the Specification of the Subject Application as originally filed, not as published.

II. Claim Amendments

Claims 99 and 100 are amended herein to address issues of form. Claim 99 is further amended herein to recite "wherein the exposed electropolished surface is uncoated". The amendments do not add new matter to the Subject Application.

Applicant respectfully submits that the present amendments do not raise new issues that would require further consideration and/or search because the Office presents arguments in the Office Action regarding uncoated electropolished surfaces in connection with claim 11, which is not amended herein. Therefore, Applicant respectfully requests entry of the present amendments for purposes of appeal, if necessary.

The present amendments (and all prior amendments and cancellations) are made without prejudice or disclaimer to the subject matter of the claims as originally filed or as previously presented. Applicant does not acquiesce or otherwise concede the correctness of the rejections to the original claims or to the previously presented claims. Applicant hereby reserves the right to pursue the subject matter of the claims as previously presented – or as originally filed – in related applications that may be currently on file or filed at a later date. Further, Applicant hereby reserves the right to submit in such related applications arguments made in connection with the Subject Application. The amendments presented herein are made solely to expedite the prosecution of the Subject Application.

III. Claim Rejections under 35 U.S.C. § 112

A. Claims Rejections under 35 U.S.C. § 112, first paragraph

The Office asserts that claim 101 lacks written description support because the specification allegedly does not describe heating only a single surface of a ferritic stainless steel article. Claim 101 does not recite this feature and, therefore, Applicant believes that the Office intended to reference claim 100, which recites "heating the at least one exposed surface of the ferritic stainless steel article". Claim 100 is amended herein to delete this phrase. Applicant respectfully submits that this amendment fully addresses the rejection under § 112 in this regard.

The Office also asserts that claims 11, 13, 16, 18, 20-22, 25, and 26 lack written description support because the specification allegedly does not contain support for the ferritic stainless steel being uncoated as recited in claim 11 (and as recited in claim 99, as amended herein). Applicant respectfully disagrees and maintains the arguments submitted in the Response dated August 28, 2009.

Regarding the written description requirement, the MPEP states that "[w]henver the issue arises, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed." MPEP § 2163.02 (case law citations omitted). Further, the MPEP states that "[t]he subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement." MPEP § 2163.02. Nevertheless, on page 29 of the Office Action, the Office states the following:

First, the Applicant primarily argues that a person skilled in the art would have understood the present inventor to have been in possession of a method for making a ferritic stainless steel article having an uncoated electropolished oxidation resistant surface since the ferritic stainless steel was cast, hot reduced, cold rolled, annealed, ground, and electropolished.

In response, the Examiner notes that any negative limitation or exclusionary proviso must have basis in the original disclosure. MPEP 2173.05(i). Since the instant specification does not recite "without a coating" or "uncoated", this limitation does not have basis in the original disclosure.

Applicant respectfully submits that the Office is applying an improper *in haec verba* requirement by stating that the Specification does not recite "without a coating" or "uncoated" and, therefore, this feature allegedly does not have a basis in the original disclosure. Compliance with the written description requirement does not require literal support using the same terms in the specification and in the claims, provided that a person skilled in the art could reasonably conclude that the inventor had possession of the claimed invention. MPEP § 2163(I).

Here, a person skilled in the art would have understood the inventor to have been in possession of a method for making a ferritic stainless steel article having an uncoated electropolished oxidation resistant surface at least based on Example 1 in the Specification, which describes the making of a ferritic stainless steel article having an uncoated, electropolished, and oxidation resistant surface. (Specification, para. [0052]-[0058], describing the casting, hot reducing, cold rolling, annealing, grinding, electropolishing, and oxidation testing of a ferritic stainless steel article that is not coated).

The Office cites to MPEP § 2173.05(i) as allegedly supporting the argument that the Specification must literally recite "without a coating" or "uncoated" in order to support claim 11 and its dependent claims. However, this section of the MPEP states "that a lack of literal basis in the specification for a negative limitation may not be

sufficient to establish a *prima facie* case for lack of descriptive support." (Emphasis added).

The MPEP further states that "[b]y disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it." "The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter." MPEP § 2163.07(a) (emphasis added, case law citations omitted).

The ferritic stainless steel article made and tested in Example 1 in the Specification inherently has a property, *i.e.*, it is uncoated. Thus, according to at least MPEP § 2153.07(a), a method for making a ferritic stainless steel article having an uncoated electropolished oxidation resistant surface is fully supported by the Specification, regardless of whether the Specification explicitly states "uncoated". Because an article having an uncoated electropolished oxidation resistant surface was described, at least implicitly, in the Specification in Example 1, the written description requirement is satisfied. MPEP § 2163.07(a) and § 2173.05(i).

Therefore, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 112, first paragraph.

B. Claims Rejections under 35 U.S.C. § 112, second paragraph

The Office asserts that claims 99-101 are indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office states that it is unclear if aluminum is included in the oxide scale or if aluminum is lacking from the oxide scale recited in claim 99. Claim 99 originally recited "..., aluminum-rich the oxide scale comprising" Applicant notes that this language contains a typographical error, which is corrected by the amendment presented herein to recite "..., the aluminum-rich oxide scale comprising" Applicant respectfully submits that this amendment fully addresses this rejection.

Further, Applicant notes that claims 1, 10, and 99 each include the feature wherein, under certain conditions, an electropolished surface develops an aluminum-rich oxide scale comprising chromium and iron and having a hematite structure. As described in the Specification, the oxide scale recited in the claims includes aluminum, chromium, and iron.

For example, paragraph [0058] of the Specification describes scanning auger microscopy analysis of the oxide scales that formed on the uncoated and exposed surfaces of samples of an electropolished ferritic stainless steel heated at 750°C and 850°C. This analysis "revealed that the oxide scale is of a single phase and contains significant concentrations of aluminum, iron, and chromium...." Further, "it appeared that electropolishing promotes the formation of [the] aluminum-rich oxide scale...." (Specification, para. [0058]).

In addition, paragraph [0064] of the Specification states that "structural characterization of the thin aluminum-rich oxides formed on electropolished [ferritic stainless steel] alloy at high temperatures...confirmed that the oxides include a significant level of iron and chromium, along with aluminum...." The aluminum-rich oxide scale that formed on the electropolished ferritic stainless steel was shown to have a chemical composition and a crystal structure that are different than the oxide scale that formed on non-electropolished samples of an identical ferritic stainless steel. (Specification, para. [0065]-[0068]).

Clearly, the aluminum-rich oxide scale described in the Specification and recited in the claims includes aluminum. Therefore, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 112, second paragraph.

IV. Claim Rejections under 35 U.S.C. § 103(a)

The Office asserts that independent claims 1, 10, and 11 would have been obvious over Ishibashi alone. The Office further asserts that independent claims 1, 10,

11, and 99 would have been obvious over Szummer in view of any one of Ono, Linden, Uematsu, or Matsui. Applicant respectfully disagrees and maintains the arguments submitted in the Response dated August 28, 2009. Applicant further addresses these rejections below.

A. Ishibashi

As noted above, claims 1 and 10 each include the feature wherein, under certain conditions, an exposed electropolished surface of a ferritic stainless steel develops an aluminum-rich oxide scale comprising chromium and iron and having a hematite structure. In order for an electropolished surface of a ferritic stainless steel to develop an oxide scale, the chemical elements that constitute the electropolished surface of the alloy must react with oxygen in an oxidizing atmosphere. For this to occur, the electropolished surface must remain exposed to the surrounding oxidizing atmosphere, otherwise the oxygen would be physically and chemically blocked from reacting with the constituent chemical elements of the electropolished surface and an oxide scale could not develop. In order to remain exposed to the surrounding atmosphere, an electropolished surface of a ferritic stainless steel article cannot be coated. In this regard, claim 11 explicitly provides that the electropolished surface is uncoated.

Nevertheless, the Office maintains that claims 1, 10, and 11 would have been obvious in view of Ishibashi, which teaches a method for making a solar collector material. The method includes mechanically polishing, chemically abrading, and electropolishing to flatten the surface of a stainless steel substrate (c.7, ll. 34-42), and then adhering an oxide coating layer to the flattened, mirror-like surface of the substrate (abstract). The oxide coating layer is adhered to the substrate using one of four techniques described in Ishibashi at column 4, lines 26-45 and column 8, lines 10-25. Thus, the mechanically polished, chemically abraded, and electropolished surface of the substrate in Ishibashi is not left exposed, but instead is actively coated with a layer of a metal oxide material.

The Office argues that the present claims recite the transitional phrase "comprising" and, therefore, are allegedly open to a coating step. However, as discussed above, a coating step would block the electropolished surface from reacting with oxygen to develop the recited oxide scale, which would eliminate this feature from claims 1, 10, 11, and 99. The Office must consider all of the words and features recited in a claim in judging the patentability of the claim against the prior art. MPEP § 2143.03. The Office cannot interpret a claim so that a recited feature is eliminated. The present claims include the following features:

- an exposed electropolished surface of a ferritic stainless steel that, under certain conditions, develops an aluminum-rich oxide scale comprising chromium and iron and having a hematite structure; and/or
- an uncoated electropolished surface.

These features are not technologically possible with a coated surface as described in Ishibashi. Accordingly, the methods recited in the present claims would not have been obvious in view of Ishibashi.

The Office further argues that an intermediate product of Ishibashi would be an electropolished and uncoated ferritic stainless steel, which allegedly meets the present claims. However, this argument is contrary to the requirement that prior art references must be considered in their entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. MPEP § 2141.02(VI). In this regard, the Office never explains why it would have been obvious for a person skilled in the art considering Ishibashi to eliminate the coating layer adhered to the underlying electropolished steel substrate.

Ishibashi emphasizes the importance of the coating layer adhered to the underlying steel substrate, which provides superior spectroscopic characteristics and absorption properties as a solar collector material (c.13, ll.44-63). Therefore, the Office's proposed modification to eliminate the coating layer disclosed in Ishibashi would render the invention disclosed in Ishibashi inoperable for its intended purpose as a solar collector material. If a proposed modification would render a prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or

motivation to make the proposed modification. MPEP § 2143.01(V). Here, there is no reason why a person skilled in the art would stop at the intermediate product of Ishibashi because Ishibashi does not teach or suggest that the steel substrate without the coating layer adhered thereto would be advantageous or desirable to a person skilled in the art. Thus, a person skilled in the art would not modify Ishibashi to eliminate the coating step.

In addition, the Office asserts that the aluminum-rich oxide scale feature recited in claims 1 and 10 is taught by the disclosure in Ishibashi at column 5, lines 14-19, which discloses that "a metal oxide coming from the stainless steel consists of those having the chemical formula of $\text{FeO}(\text{FeCr})_2\text{O}_3$ " However, this metal oxide does not include aluminum at all, let alone being aluminum-rich as recited in claims 1 and 10. Further, Ishibashi discloses that this metal oxide has a spinel crystal structure (c.5, ll.17-19), not a hematite crystal structure as recited in claims 1 and 10.

A spinel crystal structure has the general formula: $\text{A}_1^{[2+]} \text{B}_2^{[3+]} \text{O}_4^{[2-]}$. The spinel oxide disclosed in Ishibashi satisfies this formula, wherein $\text{A} = \text{Fe}^{2+}$ and $\text{B} = (\text{FeCr})^{3+}$. In contrast, a hematite crystal structure has the general formula: $\text{X}_1^{[3+]} \text{Y}_1^{[3+]} \text{O}_3^{[2-]}$. The aluminum-rich oxide scale recited in claims 1 and 10 satisfies this formula, wherein X and Y are independently selected from Al^{3+} , Cr^{3+} , and Fe^{3+} . Accordingly, the oxide scale recited in claims 1 and 10 is compositionally and structurally different than and distinct from the oxides disclosed in Ishibashi.

The Office further argues that where the claimed and prior art products are identical or substantially identical in structure and composition, or are produced by identical or substantially identical processes, a *prima facie* case of anticipation or obviousness has been established, citing to MPEP § 2112.01(I). However, the present claims do not recite products, but rather recite methods. Further, the product made in Ishibashi is not identical or substantially identical in structure or composition to a product made according to the methods recited in claims 1, 10, and 11 because, for example, Ishibashi teaches a surface coating. Moreover, the processes for making a solar collector material described in Ishibashi are not identical or substantially identical to the methods recited in claims 1, 10, and 11 because Ishibashi teaches adhering a

surface coating. Therefore, the features recited in claims 1, 10, and 11 would not have been expected by a person skilled in the art. See the Declaration of Michael P. Brady, Ph.D., submitted August 23, 2007, which provides independent expert testimony that the features recited in the present claims would have been unexpected before the Subject Application.

In addition, the Office argues that the normal desire of scientists or artisans to improve upon what is already known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages, citing to MPEP § 2144.05(II). In this regard, the Office asserts that it would have been obvious to optimize the 0.001 to 5.0 weight percent aluminum range disclosed in Ishibashi in order to determine the 0.2-1.0 weight percent aluminum range recited in claims 1, 10, and 11. This range correlates to the oxidation resistance features and the development of the distinct aluminum-rich oxide scale on the electropolished surfaces of certain ferritic stainless steels under oxidizing conditions. (Specification, para. [0071]).

However, there is no suggestion in Ishibashi that aluminum concentration correlates to any recognized result that may be optimized, let alone correlating aluminum concentration to oxidation resistance and the formation of a distinct oxide scale on electropolished surfaces under oxidizing conditions. As stated in MPEP § 2144.05(II)(B), "[a] particular parameter must first be recognized as a result-effective variable, *i.e.*, a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." Therefore, the Office's optimization argument is improper because Ishibashi does not recognize aluminum concentration as achieving any recognized result. Thus, a person skilled in the art would not have any technological basis to perform the optimization asserted by the Office to arrive at the methods recited in the present claims.

For at least the foregoing reasons, the methods recited in claims 1, 10, and 11 would not have been obvious in view of Ishibashi. Therefore, Applicant respectfully requests withdrawal of the rejections under § 103(a) based on Ishibashi.

B. Szummer in view of Ono, Linden, Uematsu, or Matsui

The Office asserts that claims 1, 10, 11, and 99 would have been obvious over Szummer in view of Ono, Linden, Uematsu, or Matsui, in the alternative. Szummer describes using electropolishing to prepare ferritic stainless steel specimens for studying the "surface microstructure of ferritic chromium stainless steels subjected to hydrogen charging" (abstract). Szummer does not teach any aluminum or rare earth metal content and the Office cites Ono, Linden, Uematsu, or Matsui (the "secondary references") for the disclosure of a ferritic stainless steel including aluminum and rare earth metals.

As a preliminary matter, Applicant notes that Linden and Uematsu teach 3-20 weight percent aluminum and 1-4.5 weight percent aluminum, respectively. In contrast, claims 1, 10, 11, and 99 recite either 0.2 to 1.0 weight percent aluminum or 0.4 to 0.8 weight percent aluminum. Therefore, Applicant respectfully requests withdrawal of the rejections under § 103(a) based on Szummer in view of Linden and Szummer in view of Uematsu.

Further, Szummer in view of the secondary references does not teach or suggest the high temperature oxidation resistance feature or the aluminum-rich oxide scale feature recited in the present claims. Indeed, Szummer in view of the secondary references does not teach or suggest electropolishing as a step in a method for making a ferritic stainless steel article having an oxidation resistant surface as recited in the present claims. Applicant respectfully submits that a person skilled in the art considering Szummer in view of the secondary references would recognize a method for studying the surface microstructure of the ferritic stainless steels disclosed in the secondary references after being subjected to hydrogen charging.

The Office acknowledges that metallographic sample preparation for studying hydrogen charging effects would be the result of Szummer modified in view of the secondary references. Nevertheless, the Office maintains that a person skilled in the art would know that the electropolished steel of Szummer in view of the secondary references would have the same features as recited in the present claims because,

allegedly, the same process is conducted on substantially the same composition. But, the Office does not explain why or how a person skilled in the art would know this considering that Szummer does not recognize any effect of electropolishing on high temperature oxidation resistance, let alone resulting in a chemical modification that results in the development of a distinct aluminum-rich oxide scale.

Here, the Office is apparently arguing that the high temperature oxidation resistance feature and the aluminum-rich oxide scale feature recited in the present claims would be inherent in Szummer in view of the secondary references, regardless of whether the cited references recognize these features. However, as set forth in MPEP § 2141.02(V), "obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established." Rather, in order to rely on some allegedly inherent feature of the prior art when establishing a *prima facie* case of obviousness, the allegedly inherent feature must have been taught or suggested in the prior art at the time that the claimed invention was made. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

Here, Applicant submits that the high temperature oxidation resistance feature and the aluminum-rich oxide scale feature recited in the present claims were not known before the Subject Application. See the Declaration of Michael P. Brady, Ph.D., submitted August 23, 2007, which provides independent expert testimony that the features recited in the present claims would have been unexpected before the Subject Application. Therefore, a *prima facie* case of obviousness has not been established. MPEP § 2141.02(V). A method for studying the surface microstructure of ferritic stainless steels after hydrogen charging (as suggested by Szummer in view of the secondary references) would not render obvious a method for making a ferritic stainless steel article having an oxidation resistant surface that develops a distinct aluminum-rich oxide scale under high temperature oxidation conditions (as recited in the present claims), "even if the inherency of a certain feature is later established." MPEP § 2141.02(V)

For at least the foregoing reasons, the methods recited in claims 1, 10, 11, and 99 would not have been obvious over Szummer in view of the secondary

references. Therefore, Applicant respectfully requests withdrawal of the rejections under § 103(a) based on Szummer in view of the secondary references.

C. Declaration of Brady under 37 C.F.R. § 1.132

Applicant respectfully submits that the Office improperly ignores the expert testimony of Michael P. Brady, Ph.D., submitted via declaration on August 23, 2007, which is evidence that the aluminum-rich oxide scale feature and the high temperature oxidation resistance feature recited in the present claims would have been unexpected before the Subject Application.

The Office argues that the expert testimony provided in the Brady Declaration is not persuasive because "Applicant has failed to set forth evidence that supports the position as to why metallurgists would not believe that high temperature oxidation resistance would not be improved by electropolishing." This is incorrect for at least the following reasons.

First, the expert testimony provided in the declaration is independent evidence that is entitled to appropriate weight. MPEP § 716.01(c)(III).

Second, in addition to providing his own expert opinion on the subject, Dr. Brady refers to scientific journal articles in his declaration confirming that persons having ordinary skill in the metallurgical arts believed that roughening the surface of a stainless steel, and not flattening the surface, would improve oxidation resistance.¹ Dr. Brady also confirms that electropolishing is a flattening technique.

¹ The following references are cited in the Brady Declaration and are of record in the Subject Application:

C. S. Giggins et al., "The Effect of Alloy Grain-Size and Surface Deformation on the Selective Oxidation of Chromium in Ni-Cr Alloys at Temperatures of 900°C and 1000°C," 245 *Transactions of the Metallurgical Society of AIME* at 2509-2514 (December 1969); and
J. M. Rakowski et al., "The Effect of Surface Preparation on the Oxidation Behavior of Gamma TiAl-Base Intermetallic Alloys," 35 *Scripta Materialia* at 1417-1422 (1996).

These references set forth evidence that independently supports Dr. Brady's expert testimony.

Applicant maintains that persuasive evidence of unexpected results is included in the Subject Application and was confirmed by the Brady Declaration. Applicant further maintains that the statements presented by Dr. Brady in the Brady Declaration are not conclusory, but rather are independent expert testimony. The Examiner has identified no basis for discounting or rebutting Dr. Brady's statements, and Dr. Brady has submitted additional documentary evidence with his declaration supporting his statements. Moreover, the subject matter recited in the claims of the Subject Application is commensurate in scope with the evidence of unexpected results provided in the Subject Application. The unexpected results and nonobviousness of the claims are both bolstered by Dr. Brady's expert testimony.

Therefore, assuming only for the sake of argument that the Office has established a *prima facie* case of obviousness, the proffered evidence of surprising and unexpected results rebuts any legal conclusion of obviousness based on a preponderance of the evidence. Therefore, the § 103(a) rejections should all be withdrawn.

V. Status of Related Cases

The Office's attention is directed to the following United States Patent Applications, which may contain subject matter related to the subject matter disclosed in the Subject Application.

- Application Serial Number 10/602,945, filed June 24, 2003. A Reply Brief was filed on November 30, 2009, which was entered and forwarded to the examiner. (Attorney Ref. RL-1627DIV).
- Application Serial Number 11/168,021, filed June 28, 2005. A Response to a Final Rejection was filed on January 19, 2010. (Attorney Ref. RL-2062/2063).
- Application Serial Number 11/169,105, filed June 28, 2005. A Final Rejection was issued on November 17, 2009. (Attorney Ref. RL-2056).
- Application Serial Number 11/169,117, filed June 28, 2005. A Response to a Non-Final Rejection was filed on January 19, 2010. (Attorney Ref. RL-2035).

VI. Conclusion

The pending claims are believed to be in condition for allowance for at least the reasons set forth herein. Applicants respectfully request favorable reconsideration and allowance of the Subject Application.

Applicants' present Response should not be taken as acquiescence to any of the specific rejections, assertions, and statements presented in the Office Action that Applicant has not explicitly addressed herein. Applicants reserve the right to specifically address all such rejections, assertions, and statements in continuing applications, subsequent responses, and/or appeal or pre-appeal proceedings, if necessary.

If the undersigned can be of assistance to the Examiner in addressing any additional issues to advance the application to a condition for allowance, please contact the undersigned at the number set forth below.

Respectfully submitted,

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